8.11 Visual Resources

The Henrietta Peaker Project (HPP) consists of a 91.4-megawatt (MW) (net), natural-gas-fired, simple-cycle power plant located approximately 10 miles southwest of Lemoore, California, on a seven-acre portion of a 20-acre parcel owned by GWF Energy LLC. The HPP will interconnect to the existing adjacent Pacific Gas and Electric Company (PG&E) Henrietta Substation through a new 550-foot 70-kilovolt (kV) transmission line supported on two new transmission poles. Other linear facilities include an approximately 16.5-foot water interconnection pipeline (from the site property boundary) and a 2.2-mile Southern California Gas Company natural gas interconnection pipeline. Additionally, approximately five acres will be used for temporary construction laydown and parking.

This section analyzes the potential for the proposed HPP to cause impacts on the visual resources in the project vicinity. This analysis is conducted in accordance with California Energy Commission (CEC) guidelines for preparing visual impact assessments and the methodology developed by the Federal Highway Administration (FHWA). The analysis also conforms to the documentation requirements of the California Environmental Quality Act (CEQA).

8.11.1 Affected Environment

The HPP is located on 25th Avenue approximately one mile south of the entrance to NAS Lemoore and State Route (SR) 198. A closed commercial warehouse is located approximately 0.7 mile south of the HPP site, on the east side of 25th Avenue. A sewage treatment plant percolation-evaporation pond area, occupying approximately 275 acres and operated by the NAS, is approximately 0.5 mile east of the site. The remainder of the surrounding area is in agricultural use. There are very few residences or other aesthetically sensitive land uses in the immediately vicinity of the site. The closest residents are living in NAS Lemoore housing, located north of SR 198 and approximately 1.5 miles northeast of the HPP. This section presents descriptions of the HPP site, its characteristics, and the visibility of the project components to nearby viewer groups.

Figure 8.11-1 provides a general location map of the project vicinity showing the location of key observation points (KOPs) in the project area. Figures 8.11-2 through 8.11-6 depict existing conditions at each KOP.

8.11.1.1 Description of the HPP Site

The HPP project site is in the south-central portion of the greater San Joaquin Valley in California. The Lemoore region of the valley is an expansive flatland with a strong rural and agricultural character. The HPP site is approximately one mile south of NAS Lemoore, near the western border of Kings County. The population density in the vicinity of the HPP site is extremely low, with no residences within a mile of the site. Most residences in the vicinity of the site are scattered ranch-style homes on parcels ranging up to several hundred acres. The majority of the local population resides on NAS Lemoore and in the city of Lemoore, approximately eight miles to the northeast of the site.

8.11.1.2 Characteristics of the HPP Site

The HPP site is bordered on the west by 25th Avenue, on the north by the PG&E Henrietta Substation, and on the east and south by agricultural property. Several 30- to 40-foot-tall wood poles supporting 115-kilovolt (kV) transmission lines run north and south on the east side of 25th Avenue along the western edge of the property. Additional 115-kV transmission lines run north-south on the west side of 25th Avenue. Three large lattice-type transmission line support towers are located on the southern and eastern fringe of the parcel.

8.11.1.3 Visual Resources in the Vicinity of the HPP Site

Because of the flatness of the area, low-lying vegetation, and intervening industrial development, views of the HPP site are largely limited to those associated with through-traffic on SR 198 or visitors exiting the NAS Lemoore entrance at the intersection of SR 198 and 25th Avenue. A limited amount of traffic on 25th Avenue will also directly pass the site. The intactness and unity of views of the area are low to moderate, due to the presence of the Henrietta Substation adjacent to the HPP site and the existing overhead transmission lines. The location of each KOP in the project area is shown on Figure 8.11-1 and discussed below.

KOP-1. KOP-1 is shown on Figure 8.11-2. KOP-1 is a view looking southwest toward the HPP site from SR 198, between the Avenal Cutoff and 25th Avenue, at a location approximately 1.4 miles east of 25th Avenue. This is the view of the site that would be seen by motorists traveling westbound on SR 198 from the city of Lemoore, Hanford, or other population centers east of the HPP site. The view has low to moderate vividness associated with the agricultural land in the foreground and the silhouette of the low foothills east of the area. The view has low intactness and unity due to the many transmission lines and the Henrietta Substation, which are dominant visual elements in the middleground of the view.

KOP-2. KOP-2 is shown on Figure 8.11-3. KOP-2 represents the view looking southeast from the closest housing to the HPP site, located at NAS Lemoore. These houses are located along SR 198 about one mile east of the intersection of 25th Avenue. These homes are slightly lower in elevation than the SR 198 roadway and will not have a direct line-of-sight view from the first floor. However, a clear view is possible from the second floor of these homes, as represented by KOP-2. This view is very similar to KOP-1, with low to moderate vividness associated with the agriculture in the foreground. The view also lacks (i.e., possesses low) intactness and unity because of the dominant presence of transmission lines and the Henrietta Substation, now somewhat closer in the middleground.

KOP-3. KOP-3 is shown in Figure 8.11-4. KOP-3 is a view of the HPP site looking south from the NAS Lemoore entrance as seen by a visitor of the NAS. This view is considered to have low vividness, as the dominant feature of the view is the intersection of 25th Avenue and SR 198. The agricultural activities in the foreground and the transmission lines and Henrietta Substation in the middleground are incongruous visual elements that compete for the viewer's attention, resulting in a view with low intactness and unity.

KOP-4. KOP-4 is shown in Figure 8.11-5. KOP-4 is a view of the HPP looking southeast from SR 198 approximately 0.5 miles west of 25th Avenue. This view is representative of the view seen by motorists traveling eastbound on SR 198 from Interstate 5 toward NAS Lemoore, the city of Lemoore, Hanford, or other destinations to the east. This is the most visually pleasing view of the site. The view has moderate vividness as a result of the pastoral nature of the foreground agriculture and the contrast created with the sky. The view has

low to moderate intactness and unity, as the Henrietta Substation and transmission lines on the horizon are dominant industrial-type elements that compete with the otherwise natural quality of the landscape.

KOP-5. KOP-5 is shown in Figure 8.11-6. KOP-5 is a view of the HPP from 25th Avenue looking northeast. This view is representative of the view seen by a motorist traveling northbound on 25th Avenue toward NAS Lemoore. The view has low vividness due to the dominance of industrial-type elements, including the transmission lines along the shoulder of 25th Avenue and the various structures within the Henrietta Substation. The view has low intactness and unity, as the substation structures create a strong visual distraction from the agriculture in the foreground.

8.11.1.4 Visibility of the HPP

The HPP includes two 85-foot-tall, 10.5-foot-diameter exhaust stacks. These will be the most visible structures because of their height. Each combustion turbine generator (CTG) power block will be approximately 195 feet long, 20 feet wide, and 30 feet tall. In addition, each CTG inlet air structure will each be approximately 45 feet tall. An air pollution control system structure approximately 85 feet long, 25 feet wide, and 55 feet tall will extend perpendicular to the CTG. The HPP includes a control building that is approximately 85 feet long, 25 feet wide, and 15 to 22 feet tall, in addition to two approximately 30-foot-tall, 40-foot-diameter water storage tanks. Other tanks have smaller dimensions. All of the plant equipment will be located within an approximately 550-foot by 380-foot area surrounded by a neutral-colored, approximately six-foot-high fence. The existing transmission line poles and towers range in height from 75 to 140 feet. Each transmission pole supports a set of three conductors, with insulators separating the wire from the pole. Although these structures are substantially above grade level, the surrounding flat topography will limit contrasting views of the site. In addition, the proposed new transmission interconnection is extremely short, since the Henrietta Substation is directly north and adjacent to the site. Thus, the transmission interconnection will not likely be visible to most viewers. The neutral coloration of the HPP structures will soften their appearance and contrast with surrounding visual elements.

8.11.1.5 Potential for Visible Steam Plumes

The HPP is a simple-cycle project that does not involve the use of either a cooling tower or a heat recovery steam generator. Therefore, no visible steam plumes are expected from the project.

8.11.2 Environmental Consequences

8.11.2.1 Significance Criteria

This section provides a summary of the key evaluation criteria used to identify adverse visual impacts. CEQA Section 15382 includes objects of aesthetic significance in defining "significant effect." CEQA Section 15064 stipulates that public perception must be considered in determining adverse views. According to Appendix G of the CEQA Guidelines, visual resource impacts are defined as significant if a project has a "substantial, demonstrable, negative aesthetic effect."

Appendix I of the CEQA Guidelines adds that an impact is considered significant if it results in "the obstruction of any scenic vista or view open to the public, or result(s) in the creation of an aesthetically offensive site open to public view."

According to the professional standards presented in the CEC *Siting Regulations: Rules of Practice and Procedure and Power Plant Site Certification Regulations* (the CEC Guidelines) (CEC, 1997), a project will normally be considered to have a significant impact on visual resources if it would significantly:

- Conflict with local guidelines or goals related to visual quality;
- Alter the existing natural viewsheds, including changes in natural terrain;
- Alter the existing visual quality of the region or eliminate visual resources;
- Increase light and glare in the project vicinity, particularly nighttime glare;
- Result in backscatter light into the nighttime sky; or
- Result in a reduction of sunlight or the introduction of shadows in community areas.

8.11.2.2 Visual Effects

This section describes the visual and aesthetic impacts associated with the HPP.

KOP-1. A photo-simulation of the proposed HPP from KOP-1 is shown on Figure 8.11-7. Because of the distances involved, the HPP is not dominant in the view, and it appears as an almost imperceptible extension of the Henrietta Substation. While the HPP would further obstruct the view of the foothills in the far field, the obstruction is minimal. The HPP would not significantly change the vividness, intactness, or unity of this view, which remain low to moderate, low, and low, respectively. Therefore, there are no significant impacts on visual resources at KOP-1.

KOP-2. A photo-simulation of the proposed HPP from KOP-2 is shown on Figure 8.11-8. The view is similar to KOP-1 in that the HPP appears to be minor expansion of the Henrietta Substation. The stacks are discernible but not obtrusive and are consistent with other visual elements in the middleground. While the view of the foothills in the far field is more obstructed in this view, the obstruction is still minimal. Thus, the HPP would not result in significant changes to the vividness, intactness, or unity of this view, which remain low to moderate, low, and low, respectively. Therefore, there are no significant impacts on visual resources at KOP-2.

KOP-3. A photo-simulation of the proposed HPP from KOP-3 is shown on Figure 8.11-9. The stacks are clearly discernible but not obtrusive and are consistent with other industrial elements of the Henrietta Substation in the middleground. Thus, the HPP would not result in significant changes to the vividness, intactness, or unity of this view, which remain low, low, and low, respectively. Therefore, there are no significant impacts on visual resources at KOP-3.

KOP-4. A photo-simulation of the proposed HPP from KOP-4 is shown on Figure 8.11-10. The structures of the HPP are a discernible, codominant feature in the view. The vividness and unity of the view remain unchanged, at moderate and low to moderate, respectively. However, the intactness of the view is reduced from low/moderate to low due to the introduction of the new industrial element. This reduction in intactness is not considered

significant, because the existing view is not a high-quality view, and the vividness and unity of the view remain unchanged. Therefore, there are no significant impacts on visual resources at KOP-4.

KOP-5. A photo-simulation of the proposed HPP from KOP-5 is shown on Figure 8.11-11. The structures associated with the HPP are clearly dominant in this view. The HPP obstructs the view of the Henrietta Substation, with only about 50 percent of the Henrietta switchgear still visible between the two HPP units to the east of the HPP. While the HPP will further reduce the visual quality at this KOP, the existing KOP already has low vividness, low intactness, and low unity. There are no significant changes to existing vividness, intactness, or unity of this view. Therefore, there are no significant impacts on visual resources at KOP-5.

Light. The HPP site will be illuminated to provide lighting for normal conditions. Lights will be turned on each night for purposes of security and identification of the facility, and task lighting will be used as necessary. Emergency lighting may be employed during occasional training events. Light will be directed toward the interior of the plant to minimize offsite light and glare impacts. To minimize backscatter light and maintain the current relatively low levels of ambient and fugitive light, and because the purpose of the lighting is to illuminate the surfaces and ground plane of the facility, the lighting fixtures will include shields and hoods to produce downcast.

Glare. Project components at the HPP site will be constructed primarily of painted steel. Although a minimal number of features will have galvanized steel and aluminum surfaces, these materials and surfaces typically corrode, oxidize, and become dull within a few years of installation, depending on weather variability. Because the potential for daytime glare is temporary (given the natural dulling of the surfaces) and the area lacks sensitive visual receptors, glare impacts from the HPP site are considered less than significant.

Summary. Construction and operation of the HPP will not introduce elements into the local viewsheds that substantially different in character from the adjacent Henrietta Substation. The HPP will not obstruct or intrude on any views in a significant way and will not significantly diminish the vividness, intactness, or unity of the local viewsheds. In addition, the

activities associated with plant construction will be compatible with the industrial nature of the area and the existing presence of trucks and equipment.

In summary, the impacts from the construction and operation of the HPP are below significant thresholds for viewsheds, light and glare, and consistency with visual resource guidelines. The visual quality after construction of the HPP will remain consistent with existing conditions. Views of the HPP site will have:

- Low to moderate vividness due to a minimum of diversity, interest, or unique or sensitive features in the landscape and lack of distinct high-quality views
- Low to moderate intactness and unity due to the Henrietta Substation and associated transmission lines, which affect the integrity of the local viewshed

Further, construction of the HPP will not substantially alter the low to moderate vividness and low to moderate intactness of the existing viewshed. Therefore, the impacts from the HPP on visual resources in the study area are considered to be less than significant.

8.11.3 Potential Cumulative Impacts

Cumulative adverse impacts to visual resources in the local and regional vicinity of the HPP site would result from the combined implementation of the HPP and other planned or proposed industrial projects. Currently, no other planned or proposed industrial projects are known in the project vicinity.

8.11.4 Laws, Ordinances, Regulations, and Standards

Conformance with applicable laws, ordinances, regulations, and standards (LORS) is discussed in this section and summarized in Table 8.11-1.

8.11.4.1 Federal

No federal LORS concerning visual resources are applicable to the HPP.

8.11.4.2 State

The CEC Guidelines (CEC, 1997) and Appendices G and I of the CEQA Guidelines provide the criteria used to determine whether project-related visual impacts are significant. These criteria are discussed in Section 8.11.3.1.

8.11.4.3 Local

Kings County does not have specific policies on visual or aesthetic resources that apply to the HPP. However, scenic resources are addressed in the open space element of the Kings County General Plan, which is implemented by the Kings County Planning Department (1998). This element of the General Plan requires public notification and review of any projects that could adversely impact visual resources. The HPP is consistent with the land use designation for the area; therefore, the HPP is considered consistent with the General Plan requirements and the associated visual resource planning purposes.

Numerous methods have been developed to characterize the scenic quality of a viewscape and the viewer response to that resource. A standard approach to visual analysis is the one adopted by the FHWA. This approach employs the criteria of vividness, intactness, and unity (FHWA, 1983; Dunne and Leopold, 1978; Jones et. al., 1975). These criteria are defined as follows:

- *Vividness* is the visual power or memorability of landscape components as they combine in visual patterns.
- *Intactness* is the visual integrity of the natural and artificial landscape and its freedom from encroaching elements. This factor can be present in urban and rural landscapes as well as in natural settings.
- *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole. Unity frequently attests to the careful design of individual components in an artificial landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity apparent in a viewscape, as modified by its visual sensitivity. High-quality views are highly vivid and relatively intact and exhibit a high degree of visual unity. Low-quality views

lack vividness, are not visually intact, and possess a low degree of visual unity. The measure of the quality of a view must be balanced by the overall sensitivity of the viewer.

Aesthetic sensitivity is described in terms of viewer activity, awareness, and visual expectations in relation to the number of viewers and the viewing duration. For example, commuters and nonrecreational travelers generally have fleeting views and tend to focus their attention away from surrounding scenery and onto commute traffic. For this reason, a viewer group composed of commuting travelers is generally considered to have low aesthetic sensitivity. Residential viewers typically have extended viewing periods and are generally concerned about changes in the views from their homes. As a group, residential viewers are considered aesthetically sensitive.

The visibility and visual dominance of landscape elements are described with respect to their placement within the field of view. Foreground elements are features nearest to the viewer, and background elements are features at a great distance from the viewer. The middleground portion of a view is intermediate between the foreground and the background. A viewshed is defined as all the surface area visible from a particular location or a sequence of locations (e.g., roadway or trail) (FHWA, 1983).

The requirement to evaluate the project under CEQA is the only specific LORS that applies to visual resources. This AFC conforms to CEQA requirements. The project is not expected to have a significant impact on visual resources. Furthermore, the CEC, through its CEQA-equivalent review, will independently determine whether visual resources are impacted. The CEC license, when granted, will incorporate conditions of certification deemed necessary to ensure that the facility conforms with all applicable LORS and will not have a significant impact on the environment. Therefore, the project will comply with all applicable LORS.

8.11.5 Mitigation Measures

The impacts of the HPP and its transmission line on visual resources are considered less than significant; therefore, no mitigation measures are needed.

8.11.6 Proposed Conditions of Certification

Proposed conditions of certification are contained in Appendix K. These conditions are proposed in order to ensure compliance with applicable LORS and/or to reduce potentially significant impacts to less-than-significant levels.

8.11.7 Agency Contacts and Required Permits or Approvals

Applicable agency contacts are listed below. No permits or other approvals are required for visual resources.

Agency	Contact	Telephone
Kings County Department of Public Works 1400 West Lacey Boulevard Hanford, CA 93230	Harry Vechuel Public Works Director	(559) 582-3211

8.11.8 References

California Energy Commission (CEC), 1997. *Siting Regulations: Rules of Practice and Procedure and Power Plant Site Certification Regulations.*

Dunne, T., and L. B. Leopold, 1978. *Water in Environmental Planning*. San Francisco, CA.: W. H. Freeman and Company.

Federal Highway Administration (FHWA), 1983. Visual Impact Assessment for Highway Projects. Contract DOT-FH-11-9694. Washington, D.C.

Jones, G. R., J. Jones, B. A. Gray, B. Parker, J. C. Coe, J. B. Burnham, and N. M. Geitner. 1975. A Method for the Quantification of Aesthetic Values for Environmental Decision Making. *Nuclear Technology* 25(4): 682–713.

Kings County Planning Department, 1998. Kings County General Plan. Updated.

TABLES

Table 8.11-1
Laws, Ordinances, Regulation, and Standards for Visual Resources

Jurisdiction	Authority	Administering Agency	AFC Conformance Section
Federal	None applicable.	Not applicable	Not applicable
State	California Environmental Quality Act, Public Resources Code §§ 15382, 15064, Guidelines: Appendices G and I	California Energy Commission	8.11.4.2; 8.11.3.1
Local	Kings County General Plan, Open Space Element	Kings County Community Development Department	8.11.4.3

FIGURES